

## **REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. With this amendment, claims 1, 4, 10-12, 15-17, 38, and 39 have been amended, claims 2 and 19 have been cancelled, and claims 40-43 have been added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Thus, claims 1, 4-7, 10-12, 15-18, and 37-43 are pending in the application. Support for amended claim 1 can be found in paragraph [0050] of the specification. Support for new claims 40-43 can be found in paragraph [0045] of the specification.

In addition, the Applicants would like to thank Examiner Wessendorf for her comments and suggestions in the telephone interview held April 29, 2008.

## **Claim Rejections - 35 USC 112**

Claims 1-2, 4-7, 10-12, 15-19 and 37-39, as amended, were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, claims 1-2, 4-7, 10-12, 15-19 and 37-39 have been rejected for failing to “provide an adequate written description for a method for identifying a peptide that binds to a surface **having a target geometrical shape.**” (Emphasis added). Additionally, the examiner alleges “[a]dequate disclosure, like enablement, requires representative examples, which provide reasonable assurance to one skilled in the art that the compounds falling within the scopes both posses the alleged utility and additionally demonstrate that applicant had possession of the full scope of the claimed invention.” In the interview, the Examiner stated that agreed to change the “final” Action to a non-final Action. Applicants respectfully traverse this rejection.

Applicants note that independent claim 1 was amended in the previous response to replace “exposing a known phage library to a surface of a material having specific geometric patterns specific geometric patterns” with “exposing a known phage library to a surface of a material having a flat surface.” Thus, the Examiner rejects a feature that is no longer in the claim, rendering the rejection moot. Applicants further note, however, that support for binding phages to a flat surface can be found in paragraphs [0012], [0017], [0030], and [0035]. Additionally, Applicants note that Belcher (US 2003/0113714) teaches attaching peptides to HOPG, a smooth, flat surface in Example III (paragraphs [0127]). To satisfy the written description requirement, the specification need only describe in detail that which is new or not conventional. *See Hybritech v. Monoclonal Antibodies*, 802 F.2d 1367, 1384 (Fed. Cir. 1986). *Fonar Corp. v. General Electric Co.*, 107 F.3d 1543, (Fed. Cir. 1997).

### **Claim Rejections - 35 USC 112, second paragraph**

Claims 1-2, 4-7, 10-12, 15-19, and 37-39, as amended, were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 1 was rejected for use of the phrase “specific geometric pattern,” claim 2 was found not further limiting, claim 15 recited “smooth or curved” in addition to “flat” while claim 1 only recites “flat,” claim 19 was found not further limiting and claim 39 was found to be a “non-sequitur” for use of the phrase “the one or more desired elements.”<sup>1</sup> Applicants respectfully traverse these rejections.

Claim 1 was amended in the last response to replace “specific geometric patterns” with “flat surface.” Applicant submits that this rejection is moot. Further, regarding the phrase “a peptide that

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<sup>1</sup> By “non-sequitur” Applicants understand the Examiner to be making a “lack of antecedent basis” rejection.

demonstrates specific binding to the flat surface” in step (f), Applicants note that “specific binding” is described in paragraph [0032] of the specification:

[0032] Accordingly, methods of the present invention involve the use of phage display technology to identify, through combinatorial directed evolution, specific amino acid sequence(s) of a peptide that preferentially bind to a specific material surface of a geometrically distinct structure, such as a substrate for a measurement devices or analytical instrument that utilize substrates of particular shapes or atomic configuration, such as scanning probe microscopy (SPM).

Claims 2 and 19 have been canceled. Thus, the rejection of claims 2 and 19 is moot. Claim 15 has been amended to clarify that the flat surface is “smooth or curved” as disclosed in paragraph [0013] of the specification. Claim 39 has been amended to include “isolating and sequencing individual clones comprises identifying one or more desired feature of the peptide present in every evolution of repeating steps (a) to (c).” Applicant submits that amended claim 39 no longer lacks antecedent basis. Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

### **Claim Rejections - 35 USC 102**

Claims 1-2, 4-7, 10, 16, 18, and 19 were rejected under 35 U.S.C. 102(b) as being anticipated by Naik et al (Nature). Claims 1, 4-7, 10-12, 15 and 18-19 were rejected under 35 U.S.C. 102(e) as being anticipated by Belcher (US 2003/0113714). Claims 1, 4-7, 18 and 19 were rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (Science). Applicants respectfully traverse this rejection.

Independent claim 1 has been amended to include the step of “(i) fabricating a biosensor having a flat substrate surface and peptides identified by step (f).” Support for this feature can be

found in paragraph [0050] of the specification. None of the applied references teach the fabrication of a biosensor. Thus, none of the applied references anticipate independent claim 1 or any of the claims that depend on independent claim 1. Furthermore, new independent claim 40 includes, *inter alia*, the step of “associating a biomolecule with the identified peptide of step (g), wherein a nanocode is bound to the biomolecule.” None of the applied references teach “associating a biomolecule with the identified peptide” or “wherein a nanocode is bound to the biomolecule.” Thus, for at least these reasons new independent claim 40 (or any of the claims that depend on independent claim 40) is not anticipated by any of the applied references.

### **Claim Rejections - 35 USC 103**

Claims 1-2, 4-7, 10-12, 15-16, 18-19 and 37-39, as amended and added, were rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Naik or Belcher or Lee in view of Puntes (Science). Claims 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Naik or Belcher or Lee as applied to claims 1-2, 4-7, 10-12, 15-19 and 37-39 above, and further in view of Freeman et al (Science). Applicants respectfully traverse these rejections.

As discussed above, independent claim 1 has been amended to include the step of “(i) fabricating a biosensor having a flat substrate surface and peptides identified by step (f).” This feature is neither taught nor suggested by any of the applied references. Prior to this invention, to the best of Applicants knowledge, nobody had developed or used a method of *fabricating biosensors* by identifying peptides that bind to a flat surface of the biosensor as recited in claim 1. Thus, no combination of the applied references would have rendered independent claim 1 or any of the claims that depend on independent claim 1 obvious to persons of ordinary skill in the art at the

time of the invention. Further, new independent claim 40 includes, *inter alia*, the step of “associating a biomolecule with the identified peptide of step (g), wherein a nanocode is bound to the biomolecule.” This feature is neither taught nor suggested by any of the applied references. Thus, no combination of the applied references would have rendered independent claim 40 or any of the claims that depend on independent claim 40 obvious to persons of ordinary skill in the art at the time of the invention.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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